REMARKS

Previously claims 7-11 were pending. In the instant amendment, claim 10 has been canceled without prejudice to Applicants' right to pursue canceled subject in one or more related applications. Upon entry of the amendment, claims 7-9 and 11 will be pending and under consideration.

The Patent Office has indicated that claims 7-9 are allowable.

I. AMENDMENT TO THE CLAIMS

Claim 10 has been canceled without prejudice. It is believed that this amendment, if entered, places the instant application in condition for allowance. No new matter has been added. Entry of the instant amendment is respectfully requested.

No amendment fee is believed to be due.

II. REJECTION OF CLAIMS 10 AND 11 UNDER 35 U.S.C. § 103(a)

Claims 10 and 11 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over either U.S. Patent No. 6,025,130 to Thomas *et al.* ("the '130 patent") or U.S. Patent No. 6,140,305 to Thomas *et al.* ("the '305 patent"). With respect to claim 10, Applicants respectfully disagree and do not acquiesce in the rejection. Nonetheless, the rejection of claim 10 is moot in view of its cancellation. Applicants reserve the right to pursue the canceled subject matter in one or more related applications.

Applicants respectfully traverse the rejection of claim 11.

The legal standard of *prima facie* obviousness requires that three criteria be met: (1) the prior art, either alone or combination, must teach or suggest each and every limitation; (2) a suggestion or motivation in the cited references or in the art to modify or combine the cited references; and (3) the cited references must provide a reasonable expectation of successfully achieving the claimed invention. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 165 U.S.P.Q. 494, 496 (CCPA 1970). Applicants respectfully submit that *prima facie* obviousness has not been established since the Patent Office has not provided a suggestion or motivation in the cited references or in the art to modify the cited references, nor has the Patent Office indicated how the cited references provide a reasonable expectation of successfully achieving the claimed invention.

The Patent Office acknowledges that neither the '130 patent nor the '305 patent teach the composition recited in instant claim 11 in a form "suitable for administration to a subject." The '305 patent describes the purification of hereditary hemochromatosis (HH)

protein by affinity chromatography using immobilized β_2-microglobulin. *See* '305 patent, col. 24. The Patent Office alleges that one of ordinary skill in the art would have been motivated, with a reasonable expectation of success, to subject to dialysis the bound form of immobilized β_2-microglobulin that occurs during affinity purification of HH protein in order to convert it to a composition suitable for administration to a subject. Specifically, the Patent Office states that one would have been motivated "to perform this buffer exchange and administer the composition to a knock-out mouse by the teachings of the '305 patent that the HH gene product possesses significant homology to HLA Class I molecules, that β_2 microglobulin knock-out mice developed symptoms of iron overload disease and that a mutation in the β_2 microglobulin binding domain of the HH gene product predicted to ablate binding of the gene product to β_2 microglobulin was common to the majority of patients with human hemochromatosis." Applicants respectfully disagree that there is any motivation to prepare the composition recited in claim 11 suitable for administration into a subject, for example, β_2-microglobulin knock-out mice, since the composition of claim 11 would be expected to aggravate, not help, the symptoms of iron overload displayed by the β_2-microglobulin knock-out mice.

Claim 11 recites a composition comprising an isolated HFE polypeptide comprising the amino acid sequence of SEQ ID NO:2 and a full length, wild-type human β_2m suitable for administration to a subject. SEQ ID NO:2 encodes a HFE polypeptide with a H63D mutation that out-competes normal HFE protein to result in an increase of iron-associated transferrin into a cell, which is useful, for example, for treating iron deficiency diseases. *See, e.g.*, page 22, lines 25-27, and page 23, lines 4-6, of the instant specification. The β_2-microglobulin knock-out mice exhibit an overaccumulation of iron-associated transferrin. *See, e.g.*, '305 patent, col. 23, lines 30-40. Thus, administration of the composition of instant claim 11 would not be expected to be useful for administration to β_2-microglobulin knock-out mice. Applicants respectfully submit that the Patent Office has not established *prima facie* obviousness since the Patent Office has not provided a suggestion or motivation in the cited references or in the art to modify the cited references, nor has the Patent Office indicated how the cited references provide a reasonable expectation of successfully achieving the claimed invention.

Accordingly, Applicants respectfully request that the rejection of claim 11 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In light of the above amendments and remarks, the subject application is believed to be in good and proper order for allowance.

No fees are believed to be due. However, the Commissioner is hereby authorized to charge any required fee, fee under 37 C.F.R. § 1.17, any underpayment of fees, or credit any overpayment to Jones Day Deposit Account No. 50-3013 in connection to this Amendment and Response.

Respectfully submitted,

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